

Report of MSC 100

Maritime Safety Committee

3rd – 7th December 2018

International Maritime Organization (IMO), London headquarters

ITF delegation

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The Maritime Safety Committee (MSC)¹ undertakes matters in relation to maritime safety and security covering passenger ships and all merchant ships. This session dealt with Maritime Autonomous Surface Ships (MASS)², Goal-Based ships construction Standards (GBS)³, safety measures for non-SOLAS ships operating in polar waters⁴ and impact on safety matters that might arise after “the new sulphur cap” in 2020.

¹ It is one of parent Committees that has authority to approve propositions, which lie under its scope, forwarded by Sub-Committees.

² In 2017, MSC adopted this to be a new agenda item owing to a great deal of attention and urgency of needs for proactive regulatory measures. MASS has many synonyms such as autonomous ships, smart ships, remotely controlled ships, robot ships and drone ships.

³ With development of technology, SOLAS was considered to adapt the transition, not to focus only on technical construction aspects. MSC adopted the concept of *Goal-Based Standards* approach to ensure all safety, security and environment protection realms in developing regulations. GBS provides goals and functional requirements that aid Recognised Organisations (ROs) and national Administrations to conform international regulations. The latest IMO instruments using the GBS approach are the Polar Code, IGF Code and Goal-based ship construction standards for bulk carriers and oil tankers.

⁴ Notwithstanding a significant number and problems relating to non-SOLAS vessels in polar waters, they are less regulated.

On top of that, the Committee discussed and approved the following agendas:

- Safety of life saving appliances;
- Adoption of revised *Guidelines on fatigue*. The Guidelines provide information on the causes and consequences of fatigue, aiming to assist all stakeholders to contribute to mitigate and manage fatigue.;
- Piracy and armed robbery against ships. New *Global Counter Piracy Guidance*, updated *Gulf of Guinea Guidance* and version 5 of the *Best Management Practice (BMP 5)*⁵ were approved. MSC circular on *Revised Industry Counter Piracy Guidance* will be issued.; and
- Amendments of mandatory and non-mandatory instruments.⁶

Three WGs, one DG and one *Ad hoc* DG were established at this session. Apart from DG on Amendments to mandatory instrument⁶, outcomes of each Group, approved by plenary, are elaborated.

Working Group on REGULATORY SCOPING EXERCISE FOR THE USE OF MARITIME AUTONOMOUS SURFACE SHIPS (MASS)

Ship automation is not revolutionary. In fact, introduction of advanced technology in ships started more than 50 years ago. Needless to say, amending the existing or enacting new regulations is inevitable when new forms of technologies are installed. At MSC 100 a WG chaired by Sweden was established to consider a way forward for Regulatory Scoping Exercise (RSE) in two steps.

Development of naval architecture and communication technologies fostered the maritime to consider feasibility of autonomous ships in near future. IMO's MASS RSE aims to assess applicability of existing IMO instruments to the use of autonomous ships.

At this session, the finalisation of the framework and methodology of RSE step one and consideration on developing interim Guidelines on MASS trial were carried out.

Outcomes of the Group

1. Trial of autonomous ships in national level is out of IMO's jurisdiction. However, the Committee understood providing international standards, such as interim Guidelines on MASS trials, could guarantee further applications in international waters and invited members to submit proposals.
2. Target completion year of MASS RSE is 2020. That is, the first step⁷ is going to be completed during the first half of 2019 (MSC 101 in June 2019). The second step⁸ will commence in 2019 and ends in 2020.
3. The first Intersessional Working Group (ISWG) on MASS will be convened in 2-6 Sep. 2019 in order to evaluate the results of the first step and precede the second step.

⁵ To download BMP 5: https://www.maritimereglobalsecurity.org/media/1034/global-counter-piracy-guidance-bmp_low_17-07-18.pdf

⁶ For specific amendments, please contact ITF Secretariat.

⁷ The first step of MASS RSE is identification of provisions in IMO instruments.

⁸ The second step will be to analyse and determine the most suitable way to address MASS operations, considering human element, technology and operational factors by following categorisation:

- No change or developing interpretations; amendments; new instruments; or other ways.

4. A web platform in GISIS⁹ will be developed. The developed platform will be available during the first quarter of 2019. Volunteering member countries will lead and assist. IMO Members and NGO's will be authorized to submit comments through the web platform on specific rules/regulations or as general comments on the instrument under review (e.g. in case of gaps in regulations).

5. In relation to paragraph 4 of this section, IMO instruments to be covered for RSE were selected considering safety (SOLAS); collision regulations (COLREG); loading and stability (Load Lines); training of seafarers and fishers (STCW, STCW-F); search and rescue (SAR); tonnage measurement (Tonnage Convention); Safe Containers (CSC); and special trade passenger ship instruments (SPACE STP, STP).

6. Considering prematurity, definitions of MASS¹⁰ and degree of autonomy were developed only for the RSE purpose as following:

- *Degree one: Ship with automated processes and decision support: Seafarers are on board to operate and control shipboard systems and functions. Some operations may be automated and at times be unsupervised but with seafarers on board ready to take control.*
- *Degree two: Remotely controlled ship with **seafarers** on board: The ship is controlled and operated from another location. Seafarers are available on board to take control and to operate the shipboard systems and functions.*
- *Degree three: Remotely controlled ship without seafarers on board: The ship is controlled and operated from another location. There are no seafarers on board.*
- *Degree four: Fully autonomous ship: The operating system of the ship is able to make decisions and determine actions by itself.*

The above list does not represent a hierarchic order. It should be noted that MASS could be operating at one or more degrees of autonomy for the duration of a single voyage.

7. RSE identification categories are:

- *apply to MASS and prevent MASS operations; or*
- *apply to MASS and do not prevent MASS operations and require no actions; or*
- *apply to MASS and do not prevent MASS operations but may need to be amended or clarified, and/or may contain gaps; or*
- *have no application to MASS operations.*

Working Group and ISWG-MASS 1 in 2019

1. In July 2019, the volunteering Member State should also prepare a summary of results addressing in particular the main issues identified during step one in respect to specific degrees of autonomy and the specific gaps identified.

2. The first step of RSE is planned to be completed. The ITF, as an organisation speaks for global seafarers, should actively participate in commenting to highlight the importance of autonomous ship

⁹The IMO's Global Integrated Shipping Information System (<https://gisis.imo.org>). A number of shipping information is available for public as well. For RSE, it will be restricted to member States and international organisations to prevent the incomplete work promulgation.

¹⁰Definition of MASS, for only RSE, was developed in MSC 99 as "a ship which, to a varying degree, can operate independent of human interaction."

operators to have appropriate qualification because the operators' competences are explicitly related to safety, security and environmental protection.

3. The authorised first ISWG will consider the results of the first step submitted by the volunteering Member State, taking into account the information in the web platform, and making any necessary final modifications, as appropriate.

4. The second step of RSE could be planned in the light of the ISWG-MASS 1. Addressing and ensuring consideration on human element will be the predominant for the ITF.

5. Norway and Republic of Korea had submitted draft interim Guidelines on MASS trials. During MSC 100, it was addressed that manning scale pursuant to the existing international requirements should not be changed. However, it was not fully recognised. The ITF should make sure 1) the MASS trials must not exempt the existing manning regulations, and 2) the operators should be fully STCW qualified.

ITF delegation's general observation

There are some concerns that the high level review and analysis will preclude the in-depth consideration of issues that need to be raised and limit or restrict the best way to address those issues in the future work of amending or drafting new regulations. There is also a concern that member States volunteering to conduct the review and analysis of particular international instruments may be overly influenced by their national interests. We are in a new unfamiliar process that will be challenging. We will need to monitor it closely and participate fully to protect the future interests of seafarers.

Working Group on GOAL-BASED NEW SHIP CONSTRUCTION STANDARDS

To comprehend GBS, there are three IMO Resolutions and a Circular to refer:

- MSC. 290 (87) *Goal-based ship construction standards for bulk carriers and oil tankers* (SOLAS Reg. II-1/3-10), adopted in 2010, for ship construction to comply with MSC. 287(87);
- MSC. 287(87) *the International Goal-Based Ship Construction Standards for Bulk Carriers and Oil Tankers* (GBS Standards), adopted in 2010, requires ROs and national Administrations to verify its conformance by international GBS Audit Teams;
- MSC. 296(87) *Goal-based ship construction standards for bulk carriers and oil tankers* (GBS Guidelines), adopted in 2010, for ROs and national Administrations to request the Audit; and
- MSC.1/Circ.1394/Rev.1 *Generic Guidelines for developing IMO Goal-based standards*, approved in 2011, provides member Governments the process for the development, ratification, implementation and monitoring of GBS Standards to support regulatory development within IMO.

Outcomes of the Group

1. As a result of IMO GBS Audit team's initial verification, all 12 ROs, members of IACS¹¹, were verified to comply with the Standards MSC. 287(87).

2. A further RO, Türk Loydu, was confirmed its conformance.

¹¹ IACS: International Association of Classification Societies. 12 members are Lloyd's Register, Bureau Veritas, Croatian Register of Shipping, Registro Italiano Navale, American Bureau of Shipping, DNV GL, Nippon Kaiji Kyokai, Russian Maritime Register of Shipping, Polish Register of Shipping, China Classification Society, Korean Register of Shipping and Indian Register of Shipping.

3. The GBS Audit proved needs to update GBS Guidelines (MSC. 296(87)). Revised Guidelines for *Verification of Conformity with Goal-Based Ship Construction Standards for Bulk Carriers and Oil Tankers* was adopted and will enter into force from 1 Jan. 2020.

Correspondence group in 2019

1. The Sub-Committee on Ship Systems and Equipment (SSE) will advise MSC 101 regarding difficulties found during developing GBS regulations for onboard lifting appliances and anchor handling winches (OLAW).

2. Existing MSC.1/Circ.1394/Rev.1 will be amended to assist member Governments to apply. Notwithstanding the existing safety requirements stated in the Guidelines, they are insufficient to ensure the safety. The ITF should make sure the Guidelines provide more robust safety measures for seafarers onboard.

Working Group on SAFETY MEASURES FOR NON-SOLAS SHIPS OPERATING IN POLAR WATERS

Polar Code was adopted in 2014 to improve safety of ships and lives in polar waters and entered into force in 2017. Currently, the Code does not bind non-SOLAS ships such as cargo ships of less than 500 gt, pleasure yachts and fishing vessels. Developing mandatory or non-mandatory measures for these ships was discussed.

Outcomes of the Group

1. A roadmap which suggests revisions to SOLAS and the Polar Code for adoption in 2022 was agreed.

2. Based on the consideration of the Sub-Committee on Ship Design and Construction (SDC) about recommendatory safety measures in line with the view of the 2012 Cape Town Agreement for fishing vessels of 24m or above and pleasure yachts above 300gt not engaging in trade, the Committee considered extending the application of Ch.9 *Safety of navigation*, Ch.10 *Communication* and Ch.11 *Voyage planning* of Polar Code.

3. The Committee agreed on preliminary draft text that broadens the application of the Polar Code to SOLAS Ch. V *Safety of navigation*.

Working group in 2019

1. Aligning with SDC's consideration, Ch. 9, 10 and 11 of the Polar Code may extend their applications to non-SOLAS ships.

2. Due to the matter of urgency, an interim measure such as a resolution could be developed. Safety of seafarers regardless of ships is the biggest priority for the ITF. Thus, it is essential to participate in all discussions undertaking the Polar Code.

Ad hoc Drafting Group on Fuel Oil Safety Matters

Fuel oil and safety implications have been long-standing concerns. Implementation of the new 0.50% sulphur cap in 2020, at 72nd session of Marine Environment Protection Committee (MEPC) was welcomed owing to the environmental benefit. On the other hand, unapproved and unproven fuels, which still comply with the new restriction, could generate horrendous accidents. Therefore, the Committee established an *Ad hoc* DG to construct a vision and scope for adding as a new agenda at MSC 101.

Outcomes of the Group

1. New agenda item "*Development of further measures to enhance the safety of ships relating to the use of fuel oil*" is added. The development is targeted to be completed in 2021.
2. The scope of work is "*Based on the review of existing safety provisions for fuel oil and information concerning the safety implications associated with the use of fuel oil, develop further measures to enhance the safety of ships relating to the use of fuel oil.*"
3. A joint MSC-MEPC circular on *ensuring fuel suppliers deliver compliant fuels* will be developed by the Sub-Committee on Pollution Prevention and Response (PPR) for the approval of MEPC 74 and MSC 101.

Working group in 2019

1. WG on *Fuel oil Safety* may be established.
2. Fuel oil causes immense implications on seafarers' health. The consideration of this WG is not limited to only the new sulphur limit in 2020, but general fuel oil.
3. The scope does not specifically highlight the safety of seafarers. The ITF should participate to address the acute severity of problems caused by fuel oil on board.

Work Programme¹²

The ITF should draw its attention to the following approve new outputs and subsidiary bodies which will carry out the work:

- The use of e-certificates, instructed to the Sub-Committee on Human element, Training and Watchkeeping (HTW), the Sub-Committee on Implementation of IMO Instruments (III) and Facilitation Committee (FAL); and
- Broadening inspection units of cargo transportation to revise MSC. 1/Circ. 1442 *Inspection Programmes for Cargo Transport Units Carrying Dangerous Goods*, instructed to the Sub-Committee on Carriage of Cargoes and Containers.

¹² Work programme is a provisional agenda item to propose a Committee a new output which is not listed in two-year plan. Member States, occasionally with interested international organisations, can only submit the proposition. Approved new outputs are added in biennial agenda and relevant Committees and Sub-Committees are instructed to carry out the work.



Action point

Safety related issues are critical for maritime workers. MSC 100 evidently projected integration between top-notch technologies and human element and close connection between environment and maritime safety.

Nonetheless to say, autonomous ships and future regulatory will affect maritime workers' education, certification and employment. Seafarers should know that we are ready to accept another evolution.

Possible or existing hazards aboard caused by fuel oil should be informed.

Our members engaging and will be engaging in voyages in polar waters ought to be aware of more stringent regulations for your own safety.

Despite day-by-day changes of the maritime, maritime workers have shown how resilient we are. All information enclosed is the utmost interest of the ITF. We need to be aware of what is happening in regulatory sector, which will aid us to be more proactive.

*Aforementioned IMO documents can be provided if requested.